

WHAT IS CLAIMED IS:

1. A conveyor type oven for processing food comprising:

an oven housing forming an oven cavity, the oven housing having an inlet opening and an exit opening each in communication with the oven cavity;

a conveyor system disposed through the inlet opening, the oven cavity, and the exit opening for transporting food products through the oven cavity for processing the transported food product;

a first heating section disposed within the oven housing positioned on one side of the conveyor, the first heating section including a first type of radiant heat emitter focusing radiant heat toward the conveyor;

a second heating section disposed within the oven housing and positioned on an opposing side of the conveyor from the first heating section, the second heating section including a second type heat emitter focusing radiant heat substantially toward the conveyor; and

a temperature control system connected to the heat emitters of the first heating section and the second heating section in a manner to monitor and selectively control the temperature of each heating section separately from the that of the other heating section.

2. The apparatus of claim 1 wherein the first type emitter is a flat bar radiant heat emitter.

3. The apparatus of claim 1 wherein the second heating section includes an inlet heating zone and an outlet heating zone.

4. The apparatus of claim 3 wherein each heating section is individually monitored and controlled by the temperature control system.

5. A conveyor type oven for processing food comprising:
 - an oven housing forming an oven cavity, the oven housing having an inlet opening and an exit opening each in communication with the oven cavity;
 - a conveyor system disposed through the inlet opening, the oven cavity, and the exit opening for transporting food products through the oven cavity for processing the transported food product;
 - a first heating section forming a first heating zone disposed within the oven housing positioned on one side of the conveyor, the first heating section including a first type of radiant heat emitter focusing radiant heat toward the conveyor;
 - a second heating section disposed within the oven housing and positioned on an opposing side of the conveyor from the first heating section, the second heating section having an inlet heating zone and an outlet heating zone, each of the inlet and outlet heating zones having a second type heat emitter directing radiant heat therefrom substantially toward the conveyor; and
 - a temperature control system connected to the heat emitters of the first heating zone, the inlet heating zone, and the outlet heating zone in a manner to monitor and selectively control the temperature of each heating zone separately from the temperature control of the other heating zones.
6. The apparatus of claim 5 wherein the first type emitter is a flat bar radiant heat emitter.
7. The apparatus of claim 5 wherein the second type emitter is a ceramic radiant heat emitter.

8. The apparatus of claim 7 wherein the ceramic heat emitter has a concave shape with a concave face directed toward the conveyor and focusing the emitted energy substantially toward the conveyor.
9. The apparatus of claim 7 wherein the watt density for the second type emitter is within the range of 6 watts per square inch and 39 watts per square inch.
10. The apparatus of claim 7 wherein the radiant energy emitted from the ceramic heat emitter is in the range from 2 to 7 micrometers.
11. The apparatus of claim 5 wherein the second type heat emitter has a concave shape with a concave face directed toward the conveyor and focusing the emitted energy substantially toward the conveyor.
12. The apparatus of claim 5 wherein the temperature control system substantially maintains the first heating zone at a first set temperature.
13. The apparatus of claim 5 wherein the temperature control system substantially maintains the inlet heating zone and the outlet heating zone at a second set temperature.

14. The apparatus of claim 12 wherein the temperature control system substantially maintains the inlet heating zone and the outlet heating zone at a second set temperature.

15. The apparatus of claim 6 wherein the second type emitter is a ceramic radiant heat emitter.

16. The apparatus of claim 6 wherein the second type heat emitter has a concave shape with a concave face directed toward the conveyor and focusing the emitted energy substantially toward the conveyor.

17. A conveyor type oven for processing food comprising:

an oven housing forming an oven cavity, the oven housing having an inlet opening and an exit opening each in communication with the oven cavity;

a conveyor system disposed through the inlet opening, the oven cavity, and the exit opening for transporting food products through the oven cavity for processing the transported food product;

a first heating section forming a first heating zone disposed within the oven housing positioned on one side of the conveyor, the first heating section including a flat bar radiant heat emitter focusing radiant heat toward the conveyor;

a second heating section disposed within the oven housing and positioned on an opposing side of the conveyor from the first heating section, the second heating section having an inlet heating zone and an outlet heating zone, each of the inlet and outlet heating zones having a ceramic heat emitter having a concave face directing radiant heat therefrom substantially toward the conveyor; and

a temperature control system connected to the heat emitters of the first heating zone, the inlet heating zone, and the outlet heating zone in a manner to monitor and selectively control the temperature of each heating zone separately from the temperature control of the other heating zones.

18. The apparatus of claim 17 wherein the temperature control system substantially maintains the first heating zone at a first set temperature.

19. The apparatus of claim 17 wherein the temperature control system substantially maintains the inlet heating zone and the outlet heating zone at a second set temperature.

20. The apparatus of claim 18 wherein the temperature control system substantially maintains the inlet heating zone and the outlet heating zone at a second set temperature.

21. A method of processing food products comprising the steps of:
- transporting a food product through an oven cavity for processing;
- emitting radiant heat from a first heating zone toward the food product within the oven cavity, wherein the radiant heat is emitted from a first type of heat emitter;
- emitting radiant heat from an inlet heating zone toward the food product within the oven cavity, wherein the radiant heat is emitted from a second type of heat emitter;
- emitting radiant heat from an outlet heating zone toward the food product within the oven cavity, wherein the radiant heat is emitted from a second type of heat emitter; and
- controlling the temperature of each of the first heating zone, the inlet heating zone, and the outlet heating zone individually.
22. The method of claim 21 wherein the first type emitter is a flat bar radiant emitter.
23. The method of claim 21 wherein the second type emitter is a ceramic emitter having a concave face directed toward the food product.
24. The method of claim 22 wherein the second type emitter is a ceramic emitter having a concave face directed toward the food product.